Fig. 1A

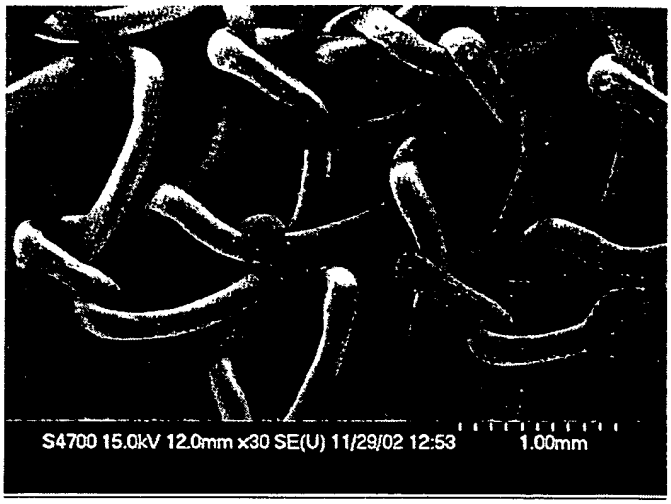


Fig . 1B

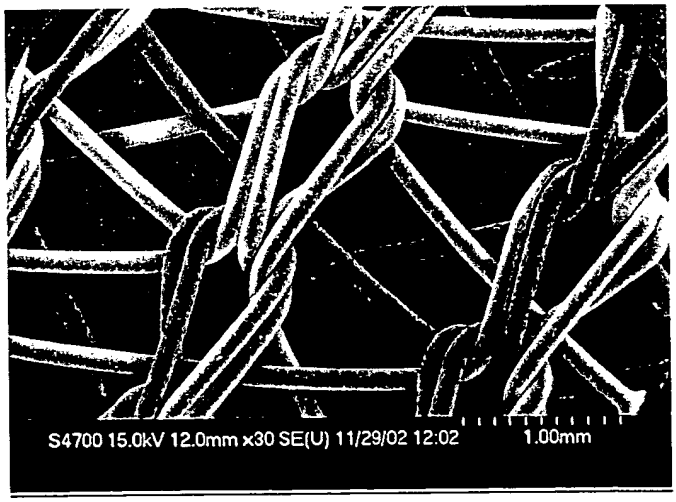


Fig. 1C

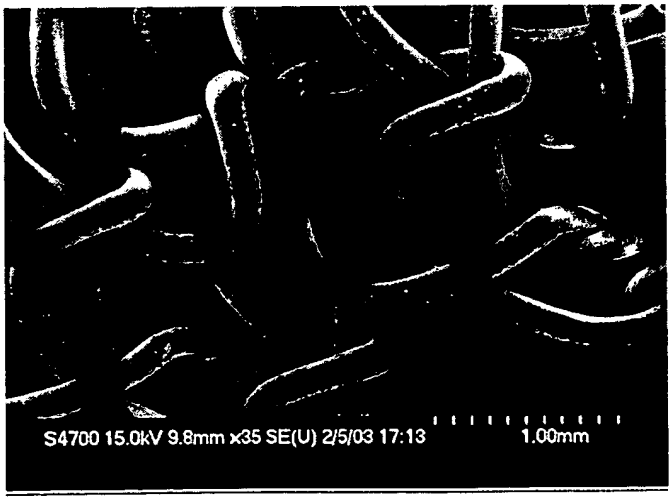


Fig. 2A

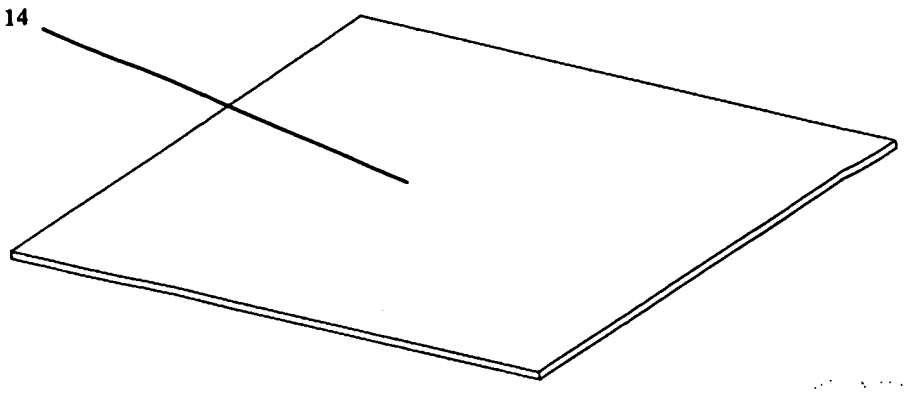


Fig. 2B

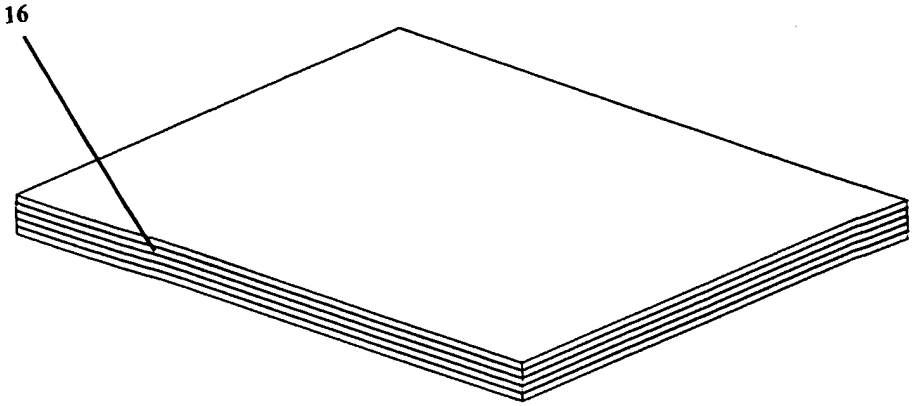


Fig. 2C

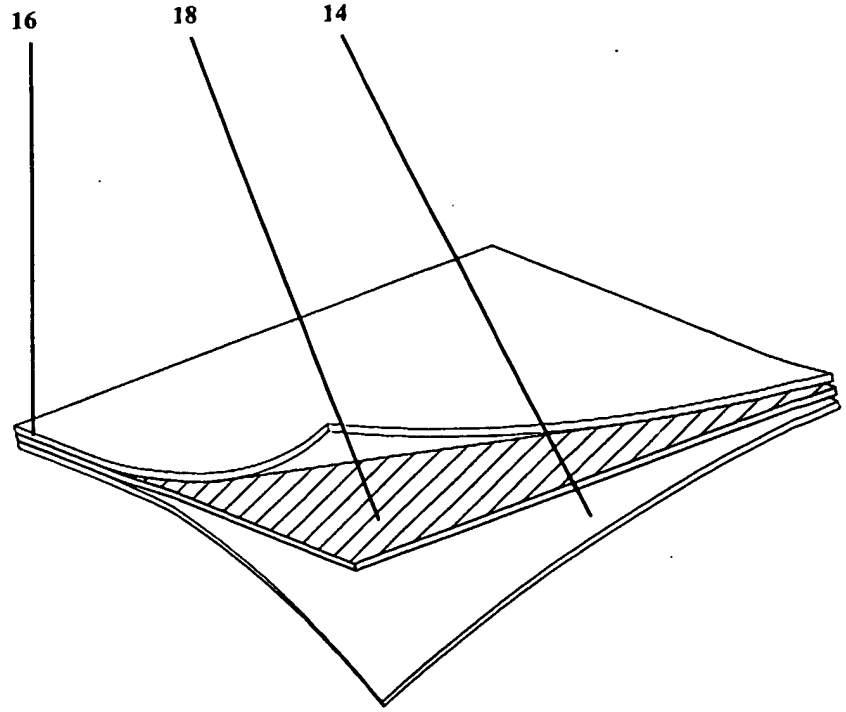


Fig. 3A

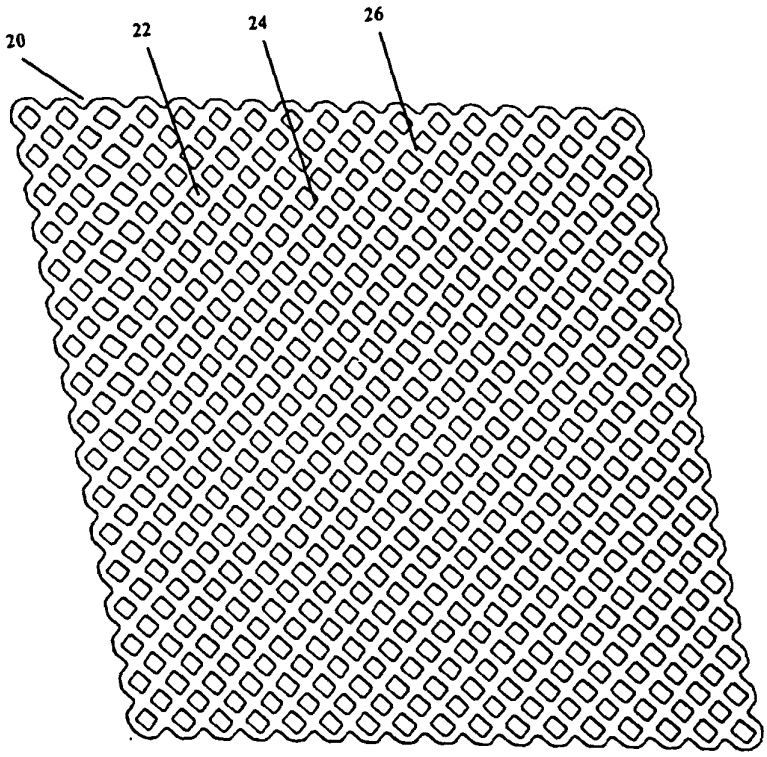


Fig. 3B

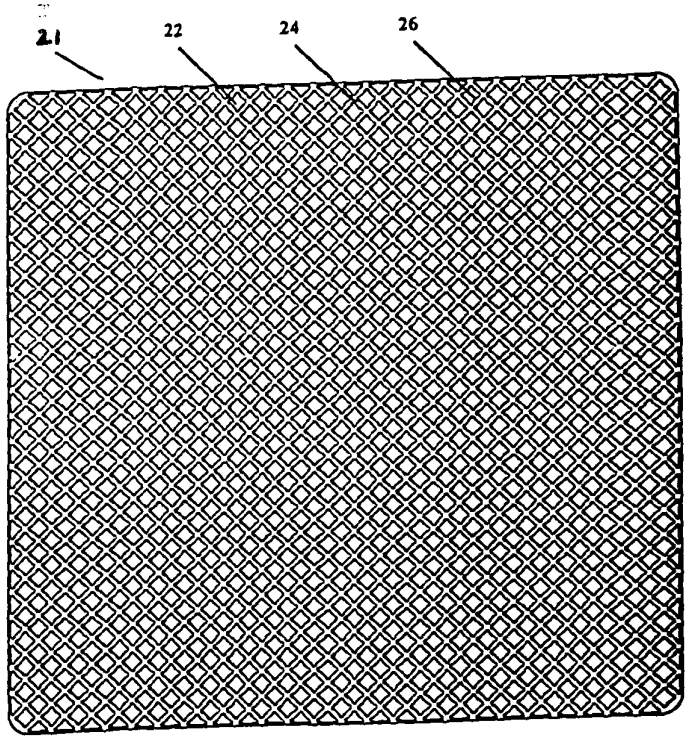


Fig. 4A

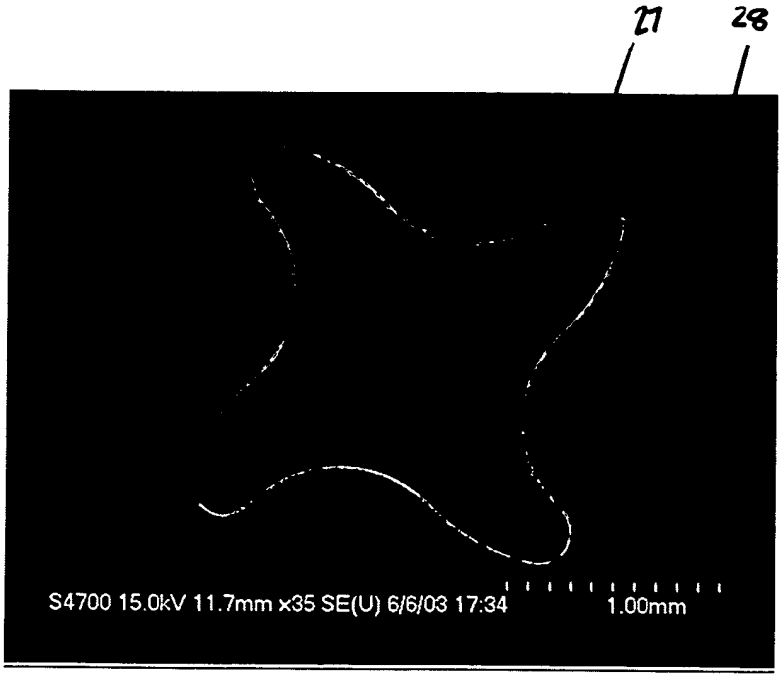
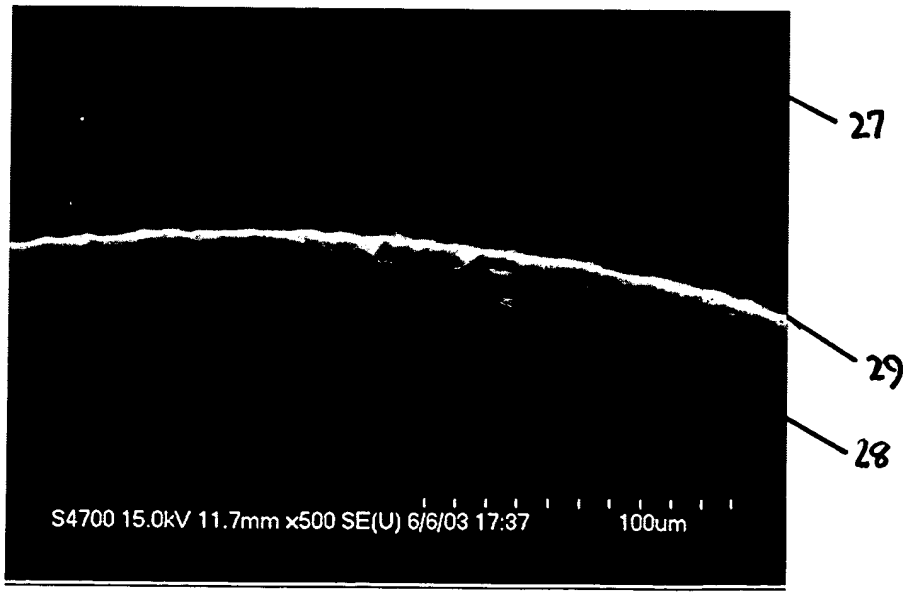

27
28
S4700 15.0kV 11.7mm x35 SE(U) 6/6/03 17:34
1.00mm

Fig. 4B


27
29
28
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100um

Fig. 5

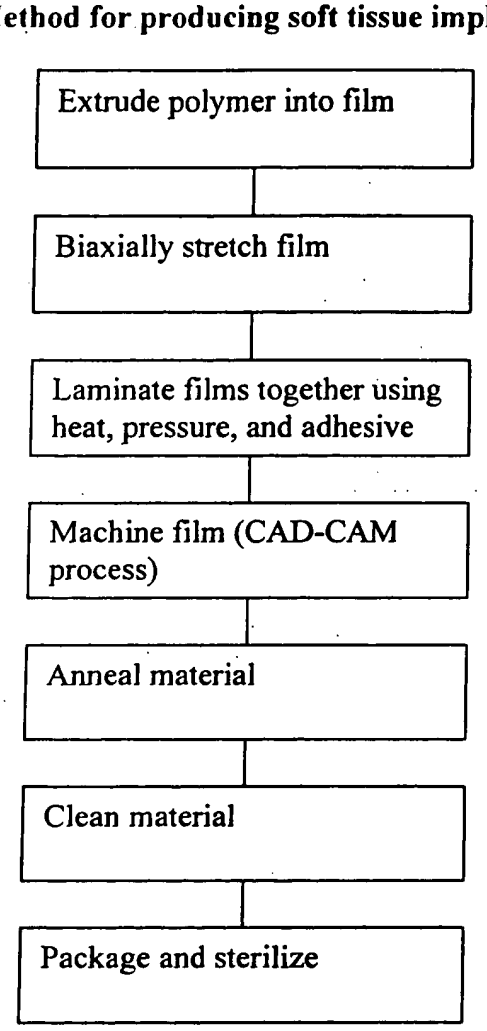

Method for producing soft tissue implant
Extrude polymer into film
Biaxially stretch film
Laminate films together using heat, pressure, and adhesive
Machine film (CAD-CAM process)
Anneal material
Clean material
Package and sterilize

Fig. 6A

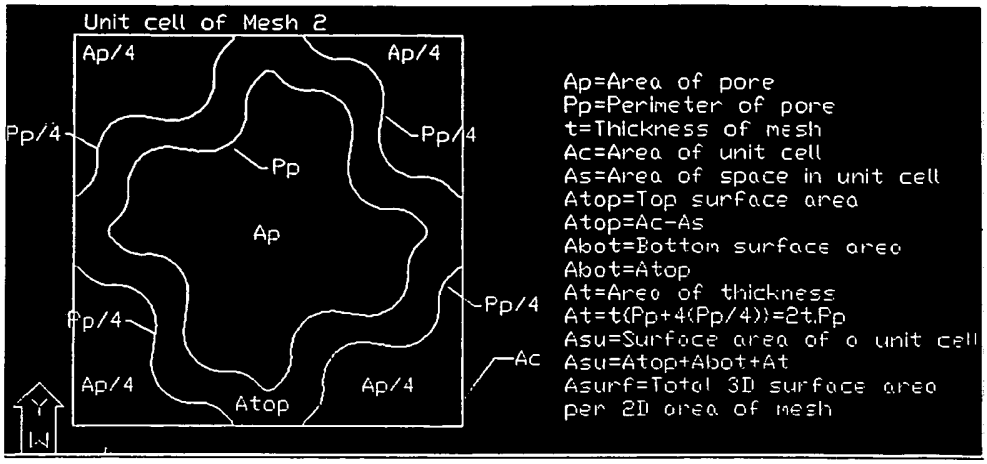


Fig. 6B

Method for Calculating Mesh2 Surface Area

Area of pore	Ap	10.89	mm2
Perimeter of pore	Pp	15.08	mm
Thickness	t	0.20	mm
Area of unit cell	Ac	31.00	mm2

Area of space in unit cell	As=Ap+4(Ap/4)=2Ap	21.78	mm2
Top surface area	Atop=Ac-As	9.22	mm2
Bottom surface area	Abot=Atop	9.22	mm2
Area of thickness	At=t(Pp+4(Pp/4))	6.03	mm2

3D surface area of a unit cell	Asu=Atop+Abot+At	24.47	mm2
Surface area ratio	Asurf=Asu/Ac	0.79	

Fig. 7A

Fig. 7B

Fig. 8A

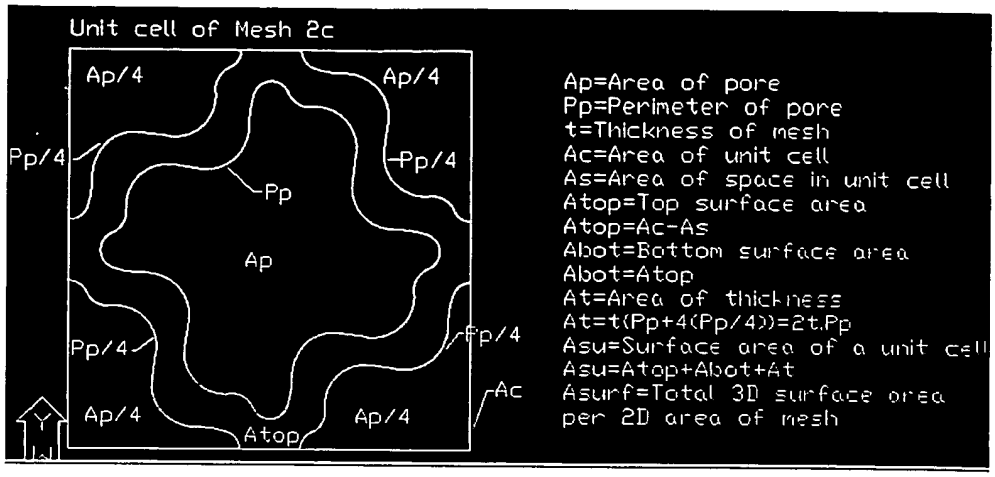


Fig. 8B

Method for Calculating Mesh2C Surface Area

Area of pore	Ap	2.78	mm2
Perimeter of pore	Pp	7.83	mm
Thickness	t	0.20	mm
Area of unit cell	Ac	7.75	mm2

Area of space in unit cell	As=Ap+4(Ap/4)=2Ap	5.56	mm2
Top surface area	Atop=Ac-As	2.19	mm2
Bottom surface area	Abot=Atop	2.19	mm2
Area of thickness	At=t(Pp+4(Pp/4))	3.13	mm2

3D surface area of a unit cell	Asu=Atop+Abot+At	7.51	mm2
Surface area ratio	Asurf=Asu/Ac	0.97	

Fig. 9A

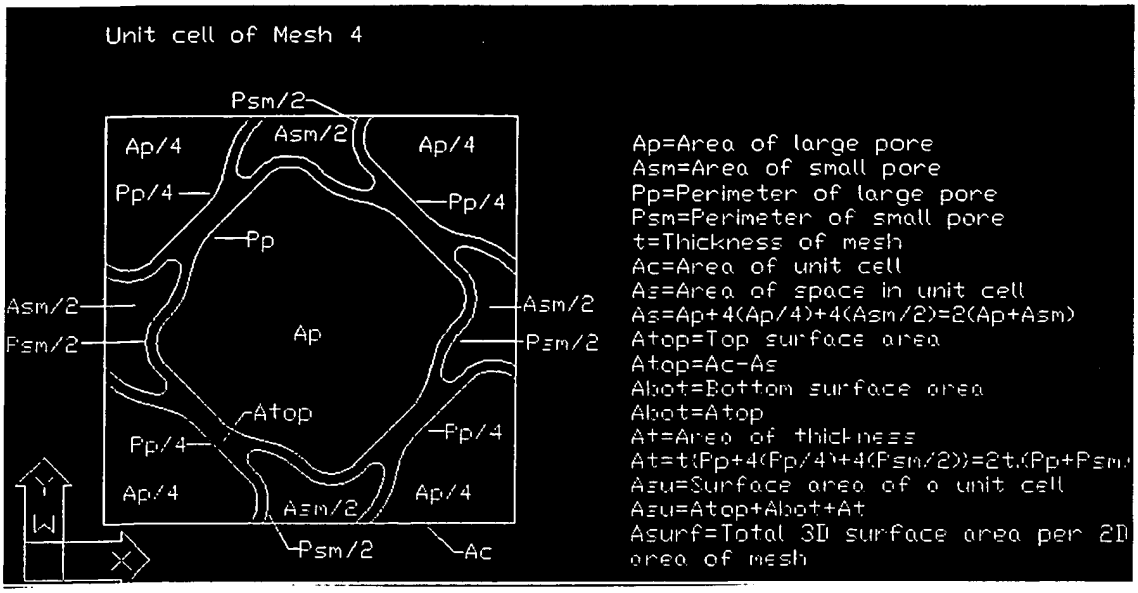

Unit cell of Mesh 4
Psm/2
Asm/2
Ap/4
Ap/4
Pp/4
Pp/4
Pp
Asm/2
Asm/2
Psm/2
Psm/2
Ap
Atop
Pp/4
Pp/4
Ap/4
Asm/2
Ap/4
Psm/2
Ac
Ap=Area of large pore
Asm=Area of small pore
Pp=Perimeter of large pore
Psm=Perimeter of small pore
t=Thickness of mesh
Ac=Area of unit cell
As=Area of space in unit cell
As=Ap+4(Ap/4)+4(Asm/2)=2(Ap+Asm)
Atop=Top surface area
Atop=Ac-As
Abot=Bottom surface area
Abot=Atop
At=Area of thickness
Asu=Surface area of a unit cell
Asu=Atop+Abot+At
Asurf=Total 3D surface area per 2D area of mesh

Fig. 9B

Method for Calculating Mesh4 Surface Area

Area of large pore	Ap	11.17	mm2
Perimeter of large pore	Pp	12.47	mm
Area of small pore	Asm	2.20	mm2
Perimeter of small pore	Psm	8.09	mm
Thickness	t	0.20	mm
Area of unit cell	Ac	31.00	mm2

Area of space in unit cell	As=Ap+4(Ap/4)+4(Asm/2)=2(Ap+Asm)	26.74	mm2
Top surface area	Atop=Ac-As	4.26	mm2
Bottom surface area	Abot=Atop	4.26	mm2
Area of thickness	At=t(Pp+4(Pp/4)+4(Psm/2))=2t.(Pp+Psm)	8.22	mm2

3D surface area of a unit cell	Asu=Atop+Abot+At	16.74	mm2
3D surface area per 2D unit cell area	Asurf=Asu/Ac	0.54	

Fig. 10A

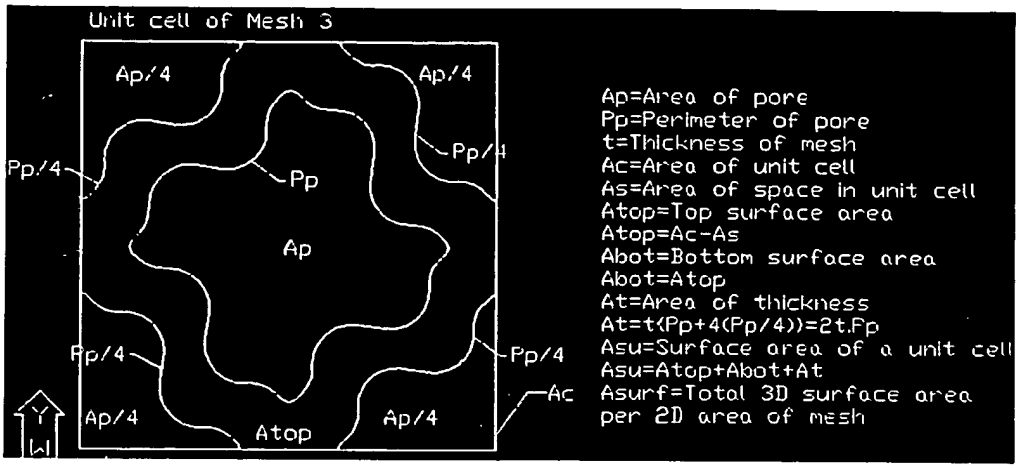


Fig. 10B Method for Calculating Mesh3 Surface Area

Area of pore	Ap	10.89	mm2
Perimeter of pore	Pp	15.08	mm
Thickness	t	0.20	mm
Area of unit cell	Ac	35.48	mm2

Area of space in unit cell	As=Ap+4(Ap/4)=2Ap	21.78	mm2
Top surface area	Atop=Ac-As	13.70	mm2
Bottom surface area	Abot=Atop	13.70	mm2
Area of thickness	At=t(Pp+4(Pp/4))	6.03	mm2

3D surface area of a unit cell	Asu=Atop+Abot+At	33.43	mm2
Surface area ratio	Asurf=Asu/Ac	0.94	

Fig. 11

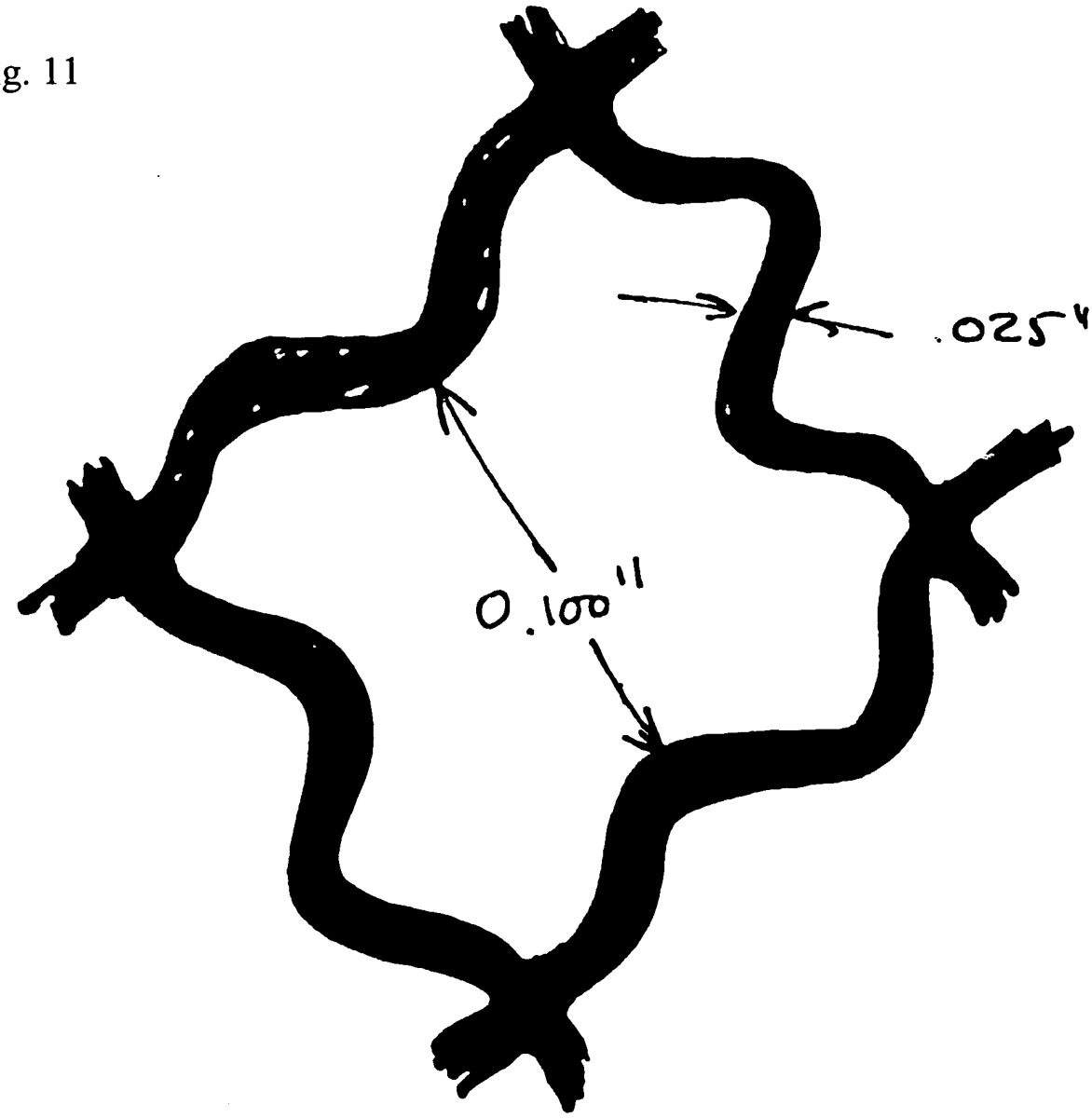
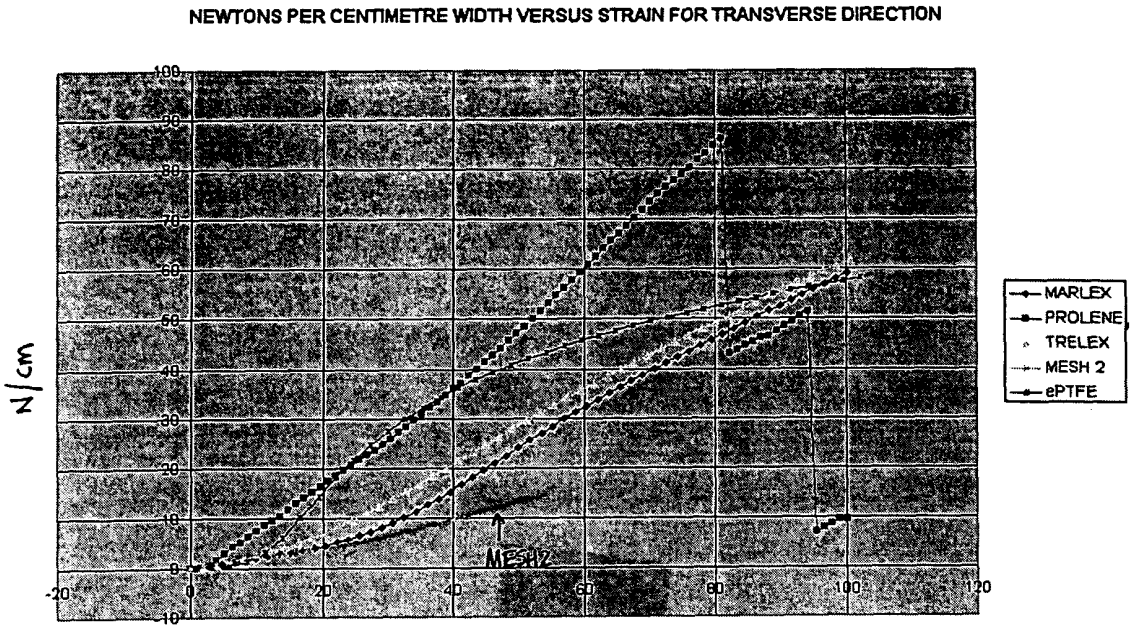


Fig. 12


NEWTONS PER CENTIMETRE WIDTH VERSUS STRAIN FOR TRANSVERSE DIRECTION
N/cm
MARLEX
PROLENE
TRELEX
MESH 2
ePTFE
MESH2